



NEXT MEETING - Coaxial Feeders

It will give us great pleasure to welcome Louis Varney, G5RV to our meeting on Tuesday 6th July for his lecture entitled "A Closer Look at Coaxial Feeders".

Louis, famous throughout the world for his multi-band amateur radio aerial, will feel at home in Chelmsford where he spent many years contributing towards the establishment of our Society and is remembered for his generous efforts in field day events.

The meeting will open at 7.30pm in the Marconi College, Arbour Lane, Chelmsford and we are confident that those attending will enjoy a pleasant and informative evening.

DATES FOR YOUR DIARY

- 6 July CLUB MEETING - Louis Varney, G5RV.
- 13 July FIELD DAY POSTMORTEM - QTH, G4KQE.
- 18 July R.S.G.B. WOBURN RALLY.
- 25 July COLCHESTER RADIO RALLY - Sheepen Road.
- 3 Aug. CLUB MEETING - Gliding - Brian, G3CVI.
- 15 Aug. SOUTHEND & D.A.R.S. RALLY - Rochford.
- 16 Aug. WATERS & STANTON OPEN EVENING.
- 5 Sep. DF EVENT (R.S.G.B.) Chelmsford / Colchester.
- 7 Sep. CLUB MEETING - Satellites - Pat Gowen, G3IOR.

WATERS & STANTON OPEN EVENING

At the recent Open Day at W & S we learned that a limited number of Open Evenings can be arranged for interested clubs.

Our Secretary, Gwyn, has applied for one of these visits and we have been offered a date for Monday 16th August, at 7.30pm for a two hour programme beginning at 8pm.

We have been asked to estimate how many members would like to attend, so if you are interested please inform a committee member.

DF NEWS - Dick, G3WHR

The first Chelmsford event - Friday 24th March.

Peter Graves had volunteered to be the hidden station for our first DF of 1993. Six teams turned up at Tiptree and in the fading light caused by dark clouds, obtained a bearing towards Marks Tey. The rain soon became a downpour which affected the strength of the transmitted signal. Mike Hawkins couldn't hear the 7.45 transmission and returned to the start. I heard a brief transmission while passing through Coggeshall and continued to Wakes Colne. Here I obtained a second bearing which was almost a reciprocal of my start bearing. I needed another bearing from Fordstreet to obtain a satisfactory cross. This meant there was a shortage of parking space when I arrived at the footpath leading to a wood by Great Tey. Once in the wood, I found some activity near a pond and some smiling faces. Peter had put up an aerial using very thin wire which was difficult to follow, but I found a tee-in which crossed over the pond and followed the footprints to where Peter was hiding.

Results

- | | | | |
|----------------------|------|-----------------|------|
| 1. Richard Witney | 8.28 | 4. Dick Brooks | 8.39 |
| 2. Philip Cunningham | 8.29 | 5. Andrew Mead | 8.48 |
| 3. Roy Emeny | 8.30 | 6. Mike Hawkins | 8.53 |

There's no Chelmsford event in July, but the next Colchester event is on Friday 16th July.

APOLOGY

Our Chairman has requested that the Newsletter should include an apology to the members who commented that our last meeting started rather late. We will try to improve in future.

NFD REPORT 1 - Gwyn, G4FKH

The day started well when I tried to gain access to the site from the wrong direction, only 8 miles and another quarter of an hour to get to the extra 30 yards. There were some puddles on the farmers track, but our vehicles didn't get nearly as dirty as last year. The weather was really marvellous the whole weekend.

We had a very good turn out at the right time for the station to be put together, all within a good time frame. Some hitches were experienced with thin cord used in conjunction with arrow slinging. A modification will be in place for next year. We also took down some aerials and re-slung them, but generally speaking it was a well co-ordinated station erection.

NAFFI facilities were available and enjoyed right from the start. All those on site would like to thank the people who supplied the goodies and Daphne for cooking it. The traditional freshly baked cakes disappeared in the twinkling of an eye.

As for the contest; the loggers and operators worked extremely hard. We achieved a reasonable score but did not do as well as we would have liked. At times our scoring rate was phenomenal whilst at others it was poor. Quite a lot of discussion has already taken place about this and a lot more will take place I'm sure.

There will be a "postmortem" on the event at the QTH of G4KQE on Tuesday 13th July at 8.15pm, all are invited but please let Andrew know in advance on ☎ (0376)583094

With about 1½ hours to go, unused aerials were dismantled and the procedure continued until the end of the contest. This left one dipole, the beam and Telomast, the operating tent and equipment. We vacated the site about 5pm. Of course the "Mead's" had to take half a dozen group photographs, perhaps Roy may be able to reproduce one in a future Newsletter. Thank-you one and all for the fantastic help provided, it was a great success as a social and work event.

NFD REPORT 2 - Dick, G3WHR

Field Day means an early start for me, nevertheless when I arrived on site the tents were up and an eager crowd were ready to start erecting the Telomast, it wasn't long before the guys were in place and an experimental hoist had proved that all was correct. This enthusiasm extended to somebody driving my 4ft earth stake nearly 3ft into the ground and then asking how much further it should go!. For some reason this caused much amusement - can it be that I am oversensitive about my earth stake.

Les arrived with the beam which was speedily assembled and ready to be attached to the rotator. At this point we discovered two things; that the new stub mast was overlong, and that nobody had a hacksaw. Fortunately I had recently fitted a new blade to my junior hacksaw but several people had muscle-ache before the stub was cut to length.

The wire aerial erectors were having their problems too. Arthur had no problem shooting an arrow over the nearby trees, but the recent rainfall had considerably enlarged the pond and general swamp area where the arrow landed. Several members showed unknown athletic skills in retrieving the arrow. Despite a long delay caused by tangled polyprop rope, the new wire dipoles were tuned by early afternoon.

We had the generator running by 2.30, it's very economical and has a large fuel tank for over 4 hours running time between fillings. Refuelling presented a slight problem caused by expansion of the petrol in the plastic cans, several were quite swollen but fortunately none split.

The generator is quiet enough to be positioned near the operating tent which reduces the length of mains cable and improves the regulation, however we still needed the stabilised 12V lighting. This year we had a new bulb so no problem with flattening the keyer battery. Also new for 93 was a floor for the operating tent, providing the op and logger freedom of movement and hopefully increased their scoring rate.

Additional comforts throughout the contest were provided by the NAFFI tent, from which we were very well served by Daphne and helpers Lisa and Peter.

My turn to log came at 10pm, with Charles on the key. Everything went very smoothly apart from the time when there was an unexpected delay in replying to a call. I glanced across to see the op rapidly transferring his fingers from coffee cup handle to key paddle - could it be that there had been some confusion!

LAST MONTH MEETING - Chris, G0IPU

This years constructors competition six entries were submitted by five members. With the usual aim of the competition in mind the judges (Chris G0IPU & John G8DET) had a hard task to come to the final decision about the winner.

The judging criteria was:-
Originality of design.
Application of technology.
Quality of workmanship.
Safety.

Entry No.1 - Dave, G3PEN

Dave submitted a PSU TESTER (DC Dummy load). He started it three years ago with the purchase of a good 20uA panel meter. The banks of load resistors are of good quality, and will handle the power but must have taken some time to assemble. Dave demonstrated the unit, loading a BNOS 6A PSU; by switching in the resistance decades from the front panel the PSU's maximum output was tested, it cut out at 5.5A. All in all a very useful bit of test gear. ★ Awarded The Novice Prize ★

Entry No.2 - Andrew, G4KQE

Andrew entered a TOP BAND DF SET. Previously he had made two set, this one is an experiment to see if he could make one even better, without messing up the originals. Based around the TDA100 AM-Rx chip and the design in RadComm by the Mid-Thames DF Club. With four PCB's and many recycled components the set even has an S meter with internal light for night time events.

It took Andrew 6+ weeks to make and now the Mead household has HIS and HER's DF sets. ★ Awarded 1st Prize ★

Entry No.3 - Andrew, G4KQE

For his second entry Andrew entered a pair of NiCad CHARGE/DISCHARGE UNITS with a selected light bulb for the load; one for the PF70 150mAh 15V battery charging at 15mA, built on a simple PCB. The second for 1.2Ah 12V battery packs. The design is per G3PMX using the BDX67A on a heat sink. Both were presented in nice cases and are used with a Smiths Timer socket to ensure no over charging.

Entry No.4 - Geoff, G7KLV

Geoff entered a FM DEVIATION METER along with a manual. With Ex-PMR equipment now available at rallies, Geoff has found an interest in their conversion to the amateur bands, but with the mix of radio's in AM and FM mode, conversion is sometimes difficult. The meter is based loosely on the ARRL design with modifications to suit components and two additional features:-

1) A 10.7MHz amp: and discriminator to check deviation at IF instead of at AF frequencies.

2) A self checking facility making the use of Bessel zero's method.

The unit has two ranges 5KHz and 10KHz at 100uV to 100mV input. Constructed on Veroboard and housed in a recycled instrument case and PSU, it looked very well made, it has room to spare inside for more if necessary. ★ Awarded 3rd Prize ★

Entry No.5 - Fred, G2HNF

Fred produced 50 to 75 ohm IMPEDANCE TRANSFORMER for 145MHz, constructed in copper pipe with SO-239 sockets each end; the inner conductor being turned on a lathe to the required diameter. In the discussion that followed it was found that under testing (by Dick G3WHR) the 75 ohm section was actually 80 ohms, probably due to a dimension misread in the turning stage, but still it is a usable item.

Entry No.6 - Roy, G3PMX

This entry was a DIGITAL VOICE using Maplin boards for speech synthesis, recording and playback. The application is quite useful. In UHF/SHF contests the aerial beams used are very narrow, and a station can call CQ for some time before gaining a contact and the throat gets a hammering; so this unit calls for you at the press of a button.

The digital audio record time varies from 5 to 20 seconds requiring 32kB of RAM, but longer recording time results in less audio quality. At the meeting, 8 seconds of Ela's (G6HKM) CQ call was demonstrated. Initially the recording is stored in RAM until the operator is happy with the sound, then it can be transferred into ROM and placed in the dedicated play back unit for use with the transmitter. Assembled by Roy over a period of time, the finish was good with an easy lift off lid to access the ROM IC. In the playback unit the RIG interface was designed by Roy and extensive RF decoupling is employed. ★ Awarded 2nd Prize ★

At the end of the meeting the prizes were awarded and I felt that being a judge was not an easy task, but still it is good to see that home constructing is alive and well. All in all a good time was had by the members and visitors at the meeting.



THE CLUB NET

The response to recent nets has been very encouraging with many stations checking-in for a brief chat and the exchange of news, views and ideas. For the benefit of new members, the Club Station G0MWT opens the net at 8.30pm on 28.325MHz, SSB, each Tuesday evening between the Club Meetings.

COMMITTEE MEETING

The July Committee meeting will be held in the Telford Lodge at 7.45pm on Wednesday 14th July, you are welcome to join us.

Continued from last months Newsletter, the interesting article by Louis Varney, G5RV. Reproduced by kind permission of the Mid-Sussex Radio Society.

THE REAL MORSE CODE

This demonstration produced a profound effect on the mind of Vail. His inherited and acquired mechanical skill and the knowledge of construction which his apprenticeship in his father's work's had given him, satisfied him that it was possible to embody this grand conception in a concrete form, which should ensure its successful employment for public communication purposes.

More than this, his education and training at the University had given him some insight into the affairs of the World and his mind intuitively formed a distinct conception of the vast scope and future importance of the invention. At the conclusion of the demonstration, Vail spoke to Professor Morse about the development of the invention. Morse said that he lacked the capital necessary for this as well as the workshop facilities. Vail then offered to work as his Partner and to provide the necessary capital and the use of a workshop in his father's Ironworks, in return for a share in the invention. Morse agreed to this arrangement. At this time, Morse demonstrated his model.

What Morse called the "port rule" consisted of cast lead extrusions representing groups of dots which, when attached to a flat belt loop were moved over hand operated rollers, causing these extrusions to pass laterally from left to right under a pivoted beam which in turn operated a pair of contacts causing current from a battery cell to operate an electromagnet which, in turn, actuated a lead pencil in contact with a moving paper tape pulled over some pulleys by a clockwork motor, thus "printing" the group of dots. These groups representing NUMERALS 1,2,3,4,5,6,7,8,9,0, had to be translated into the letters of the alphabet by reference to a special dictionary which Morse compiled, a laborious and enormously time consuming process. Also, Morse's knowledge of the theory of electro magnetism was woefully inadequate and it was not until he received help from Professor Joseph Henry that he was able to construct much more sensitive electromagnets which permitted operation over several miles of two-wire line.

The original numerical telegraph type was cast in lead by Professor Morse for assembly in the "Port Rule" to form groups of numerals representing letters and words in the English language.

Here we must leave the main story of the development of Morse's invention and its eventual successful demonstration before Congress in January 1838 in New York and the successful trials of the improved equipment over various distances culminating in a workable circuit between Baltimore and Washington in April 1844 and turn our attention to two brilliant inventions of his partner, Alfred Vail, to whom it was evident that the "port rule" and the purely numerical code invented by Morse were quite impractical for efficient and rapid communication.

The first of these inventions was the use of DASHES (having a duration equal to that of three dots) and dots to represent letters of the alphabet. Vail visited the local newspaper printer in Morristown to examine the type-cases of the compositors. He found that the letter e was the most frequently used letter in the English language, closely followed by i, s and h so that, to these letters, he allocated groups of dots only and to the less frequently occurring letters he allocated groups of dashes and of dots and dashes combined. He also eliminated the ambiguity of Morse's code for numerals by adding DASHES to the confusing purely DOT groups. However, because the Partnership Agreement which Vail had signed with Morse allowed Vail only a one quarter interest in the business, he was obliged to permit his revolutionary code to be called the "Morse Code". At this time, Vail also decided that the function of the cumbersome "port rule system" could be achieved much more efficiently by the use of a simple hand operated "Finger Key" which, for the reason referred to above, inevitably became known as the "Morse Key".

On May 24, 1844 the historic message "What hath God wrought?" was transmitted from Washington by Morse using the new Vail alphabetical code and received by Vail at Mount Clare in Baltimore.

Once the feasibility of establishing telegraph systems over long distances had been proved to be both feasible and economic, such systems were, constructed and opened for commercial traffic in the USA and Europe and in time all over the world. It was of course, necessary to make many additions to the original basic Vail-Morse code-punctuation and foreign language accents for example. Also, completely different signalling codes had to be invented for the Japanese, Russian (Cyrillic) and Arabic languages, but that is another story.

Photocopies of the full text of this article, complete with diagrams are available on request from your Newsletter editors.

Hope you like the new Fonts & Clip Art.

73 from Roy & Ela Martyr, G3PMX & G6HKM



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